

**Screenless Displays: The Future of Visual Interaction**

**TECHNICAL SEMINAR REPORT**

**MCA492L**

*submitted by*

|  |  |
| --- | --- |
| **Rajesha C U** | **1RV23MC080** |

*under the guidance of*

|  |
| --- |
| **Dr. Deepika K**  **Associate Professor**  **Department of MCA** |

*in partial fulfilment for the award of degree of*

**Master of Computer Applications**

**2024-2025**

**DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS**

**Screenless Displays: The Future of Visual Interaction**

**TECHNICAL SEMINAR REPORT**

**MCA492L**

*submitted by*

|  |  |
| --- | --- |
| **Rajesha C U** | **1RV23MC080** |

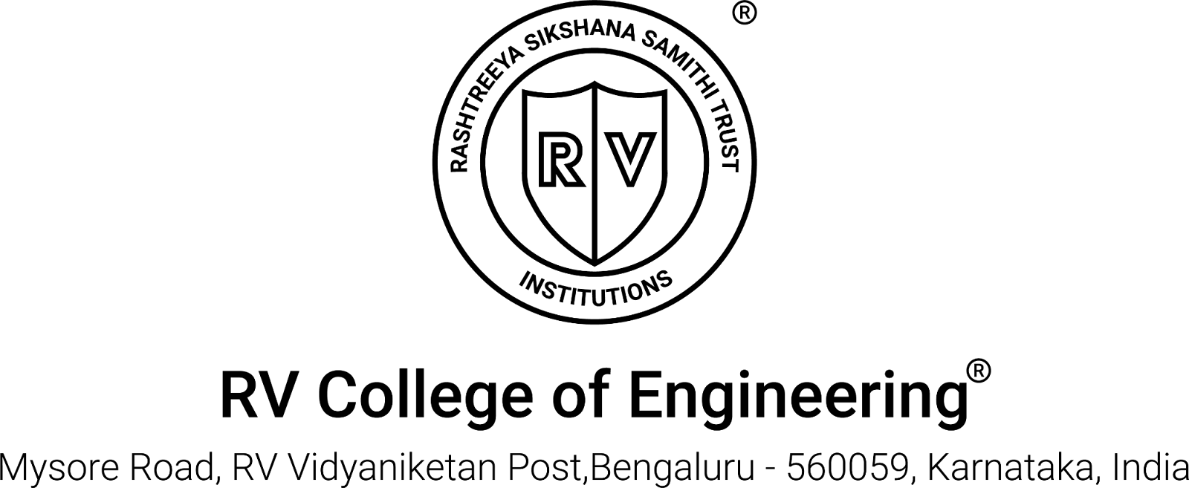
*under the guidance of*

|  |
| --- |
| **Dr. Deepika K**  **Associate Professor**  **Department of MCA** |

*in partial fulfilment for the award of degree of*

**MASTER OF COMPUTER APPLICATIONS**

**2024-2025**



**CERTIFICATE**

Certified that the Technical Seminar titled ‘**Integrated Ticket Raising and Resolution System’** is carried out by **Niranjan Patil (1RV23MC063)** a bonafide student of RV College of Engineering®, Bengaluru, in partial fulfilment for the award of **Master of Computer Applications** of  **RV College of Engineering®, Bengaluru affiliated to Visvesvaraya Technological University, Belagavi** during the year **2024-2025**. It is certified that all corrections/suggestions indicated for the internal assessment have been incorporated in the report deposited in the department library. The Seminar report has been approved as it satisfies the academic requirements in respect of technical seminar work prescribed by the institution for the said Degree.

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **Dr. Deepika K**  **Associate Professor**  **Department of MCA,**  **RVCE, Bengaluru - 59** | **Dr. Jasmine KS**  **Associate Professor and Director,**  **Department of MCA,**  **RVCE, Bengaluru - 59** |  |

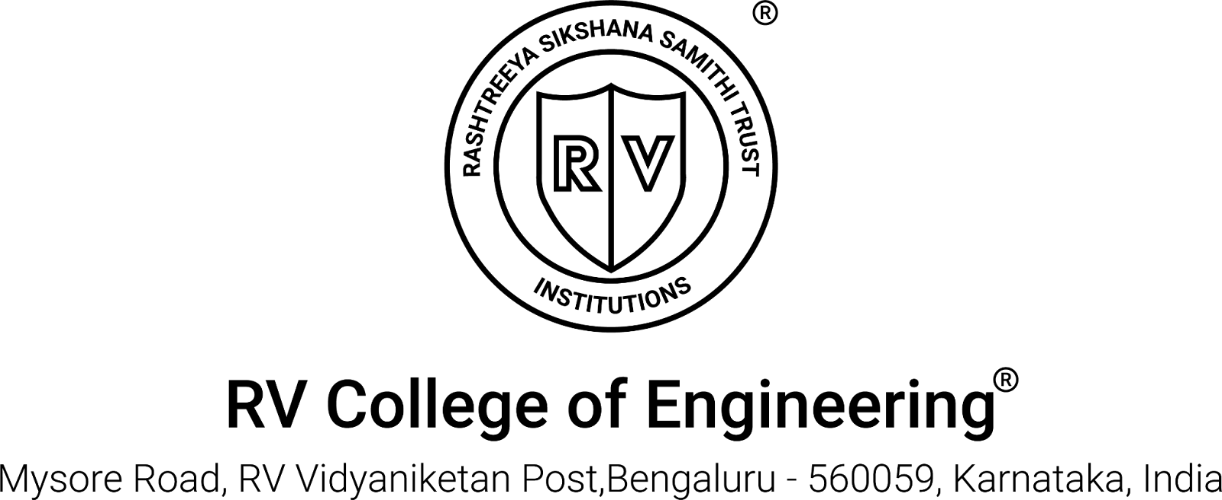
**External Viva Examination**

**Name of Examiner Signature with Date**

1.

2.

i



**DECLARATION**

I, **Rajesha C U**, the student of Fourth Semester, Department of MCA, RV College of Engineering®, Bengaluru-560059, bearing USN: **1RV23MC080** hereby declare that the technical seminar titled **‘Screenless Displays: The Future of Visual Interaction’** has been carried out by me. It has been submitted in partial fulfilment of the program requirements for the award of Degree in **Master of Computer Applications**    of  **RV College of Engineering®, Bengaluru** affiliated to **Visvesvaraya Technological University, Belagavi** during the year **2024-2025**.

Further, I declare that the content of the seminar has not been submitted to any other university or institution for the award of any other degree or diploma.

Place: Bengaluru

Date of Submission:01/08/2025

**Signature of the Student**

Student Name:Rajesha C U

USN:1RV23MC080

Department of Master of Computer Applications

RV College of Engineering®

Bengaluru - 560059

**ACKNOWLEDGEMENT**

The successful completion of the seminar on **“Screenless Display: The Future of Visual Interaction”** is the result of invaluable support, guidance, and encouragement from several individuals and institutions.

Appreciation is extended to the **management and faculty of RV College of Engineering, Bengaluru**, for providing the academic infrastructure and resources essential for conducting this seminar effectively.

Sincere thanks are offered to **Dr. K. N. Subramanya, Principal, RV College of Engineering**, for his continued encouragement of innovation and interdisciplinary exploration. His visionary leadership has served as a source of motivation throughout the development of this seminar.

Gratitude is also expressed to **Dr. Jasmine K. S, Associate Professor and Director, Department of Master of Computer Applications**, for her unwavering support and for fostering a scholarly environment conducive to research and technological inquiry.

The seminar explores the cutting-edge domain of screenless display technology, offering insights into how visual interaction can be revolutionized beyond traditional screen-based systems. By examining various approaches such as retinal projection, holography, and brain-computer interfacing, this work highlights the immense potential of screenless displays to redefine communication, accessibility, and user experience in future digital systems. The knowledge gained through this seminar contributes meaningfully to the broader discourse on emerging interface technologies and human-centric design.

**Rajesha C U(1RV23MC080)**

Department of MCA

RV College of Engineering®

Bengaluru-59

iii

**ABSTRACT**

In today’s rapidly evolving digital world, display technologies play a central role in how users interact with information. Traditional screens, however, come with limitations such as size constraints, eye strain, environmental impact due to e-waste, and limited usability in certain conditions. Screenless display is an emerging and innovative technology that offers a solution by eliminating the need for physical screens altogether. It leverages advanced techniques like retinal projection, holography, and augmented reality to present visual data directly to the human eye or into the surrounding environment.

This seminar explores the concept of screenless display, its underlying technologies, key applications, and relevance in domains such as healthcare, defense, automotive, education, and assistive technology. It also discusses sustainability aspects including reduced electronic waste, lower power consumption, and eco-friendly material use. A proposed system is presented using a wearable retinal display to demonstrate the practical application of the concept. Additionally, the report outlines unresolved societal challenges that can be addressed by this technology and highlights future directions for development and adoption.

Through this study, the seminar aims to emphasize the potential of screenless display to transform human-computer interaction and pave the way for more sustainable, efficient, and immersive visual communication systems.

iv

**Table of Contents**

|  |  |
| --- | --- |
| **PARTICULARS** | **PAGE NO.** |
| College Certificate | i |
| Declaration by student | ii |
| Acknowledgement | iii |
| Abstract | iv |
| Table of Contents | v |
| List of Tables | vi |
| List of Figures | vii |
| **Chapter 1: Introduction**  1.1 Introduction to the Screenless Displays  1.2 Description of the Screenless Displays  1.3 Applications of the Concept  1.4 Architecture Diagram | 01  02  04  06 |
| **Chapter 2: Literature Review**   * 1. Literature Survey   2.2 Summary of the Literature Survey | 08  10 |
| **Chapter 3: Technical Significance**  3.1 Technological Developments  3.2 Tools and Technologies  3.3 Sustainability and Societal Concern  3.3 Conclusion | 12  14  17  18 |
| **Bibliography** | 20 |

v

**List of Tables**

|  |  |  |
| --- | --- | --- |
| **Table No** | **Table Name** | **Page No** |
| **3.1** | **Comparison between Traditional and Screenless Display Technologies** | 14 |
| **3.2** | **Tools and Technologies Used in Screenless Display Systems** | 17 |

vi

**List of Figures**

|  |  |  |
| --- | --- | --- |
| **Figure No** | **Figure Name** | **Page No** |
| **1.1** | Block diagram of Retinal Display | 06 |
| **1.2** | Block diagram of Senaptic Interface | 07 |
| **2.1** | Mind Map Representation of Key Research Trends and Findings in Screenless Display | 11 |
| **3.1** | AR/VR headset | 16 |

vii